profile. The predicted tool path is then combined with the data from the measuring device **4** to obtain a measured deviation and calculate a computed tool path for the subsequent treating step. The tool path is then repeated with the more precise profile in the treating step using the computed tool path.

[0098] The present invention allows for real-time part measuring and treating in a precise manner.

[0099] The operator interface computer may be pre-populated with size and aspect ratios of commonly used parts. The operator interface computer may also include an input screen for the user to input information regarding the part, including length and width of the part as well as the aspect ratio of the part and/or general shape and/or any other attributes.

[0100] Spatially orienting terms such as "up", "down", "upper", "vertical", "horizontal", and the like, where used herein, refer to the positions of the respective elements shown on the accompanying drawing figures and the present invention is not necessarily limited to such positions.

[0101] As can be seen from the foregoing as well as the figures, the present invention provides for improvements over the prior art in that the present invention provides an improved means of measuring a circumferential edge of a part in an unique manner that overcomes the deficiencies of the prior art.

[0102] It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficiently attained and, since certain changes may be made in the above constructions without departing from the spirit and scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

[0103] It should also be understood that the following claims are intended to cover all of the generic and specific features of the invention described herein and all statements of the scope of the invention that as a matter of language might fall therebetween.

What is claimed is:

1. A method of treating a circumferential edge of a part having a predetermined general shape and aspect ratio, the method comprising the steps of:

a) generating a predicted tool path of the circumferential edge of the part based on the predetermined general shape and aspect ratio of the part;

b) mapping the circumferential edge of the part with a measuring device to measure a deviation between the predicted tool path and an actual part profile using the measuring device over at least substantially the entire circumferential edge of the part;

c) combining the predicted tool path with the measured deviation to determine a computed tool path;

d) following the circumferential edge of the part with a treating device using the computed tool path, wherein the computed tool path represent the sum of the predicted tool path and the measured surface profile deviation,

wherein the circumferential edge of the part is measured and treated, and

wherein the computed tool path follows the circumferential edge of the part precisely to improve the accuracy of the edge treatment process.

2. The method according to claim **1**, wherein the part comprises a material selected from the group consisting of ceramics, glass, laminates, veneers, composite materials, thermoplastic and/or thermosetting polymers, photosensitive materials or photocurable materials, wood, metal, metal alloys, and combinations of one or more of the foregoing.

3. The method according to claim **1**, wherein the measuring device comprises a roller or a wheel or a non-rotating round surface.

4. The method according to claim **1**, wherein the treating step with the treating device comprises priming, painting, coating, pre-coating, machining, grinding, sanding, polishing, or thermal edge finishing the circumferential edge of the part.

5. The method according to claim **3**, wherein the treating device comprises a roller or a wheel or a non-rotating round surface and the treating device has substantially the same diameter as the measuring device.

6. The method according to claim **1**, comprising the step of mounting the part on machine elements, whereby the part can be quickly and repeatably exchanged on the machine elements.

7. The method according to claim **6**, wherein the machine elements are capable of vertical and rotational movement, wherein the part mounted on the machine elements rotates relative to the measuring device and the part remains in contact with the measuring device while the part is being measured;

wherein the computed tool path is obtained.

8. The method according to claim **7**, wherein measuring device moves linearly relative to the part mounted on the machine elements due to the difference between a predicted measurement position and an actual measurement position of the circumferential edge obtained by the measuring device.

9. A method of treating a circumferential edge of a part having an unknown shape and dimensions, the method comprising the steps of:

a) mapping at least substantially the entire circumferential edge of the part with a measuring device to measure the actual part profile and create a computed tool path for the actual surface profile; and

b) following the circumferential edge of the part with a treating device using the computed tool path,

wherein the circumferential edge of the part is measured and treated, and

wherein the computed tool path follows the circumferential edge of the part precisely to improve the accuracy of the edge treatment process.

10. A method of treating a series of circumferential edges of parts having similar shapes and dimensions, comprising the steps of:

a. obtaining a previous tool path of the circumferential edge of a part, wherein the previous tool path is one used in treating a previous work piece having a similar shape and dimensions;

b. mapping the circumferential edge of a part with a measuring device to measure a deviation between the previous tool path and the actual surface profile using the measuring device over at least substantially the entire circumferential edge of the part;

c. combining the previous tool path with the measured deviation to determine a computed tool path; and